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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,330	12/05/2003	Manoharprasad K. Rao	FGT 1899 PA	1329
28549	7590	05/20/2005	EXAMINER	
KEVIN G. MIERZWA ARTZ & ARTZ, P.C. 28333 TELEGRAPH ROAD, SUITE 250 SOUTHFIELD, MI 48034			LAI, ANNE VIET NGA	
			ART UNIT	PAPER NUMBER
			2636	

DATE MAILED: 05/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/707,330	Applicant(s) RAO ET AL.	
	Examiner Anne V. Lai	Art Unit 2636	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/10/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-6, 8-10, 12 and 17-20 are rejected under 35 U.S.C. 102(a) as being anticipated by **Yokota et al** [US. 6,560,520].

In claim 1, **Yokota et al** disclose an adaptive collision load path modification system for vehicle comprising: a plurality of object detection sensors (10R/L, fig. 3); at least one structural stiffness-adjusting device (airbag 20R/L); and a controller (ECU 11) for activating the stiffness-adjusting device in response to object detection signals (col. 7, lines 38 – col. 8, lines 54).

In claim 2, **Yokota et al** disclose the object detection signals comprise collision detection information (abstract).

In claims 3 and 4, **Yokota et al** disclose an impact (contact) sensor such as an accelerometer (col. 11, lines 45-46).

In claim 5, **Yokota et al** disclose a variety of object sensors including radar, lasers, etc. (col. 7, lines 45-53).

In claim 6, **Yokota et al** disclose the stiffness-adjusting device comprises an air bag (20, figs. 1-3).

In claim 8, **Yokota et al** disclose the controller activated the stiffness-adjusting device in response to a collision object parameter selected from speed, weight, location, size (weight sensor, seat sliding sensor, occupant position sensor; col. 11, line 51-col. 12, line 2).

In claims 9-10, **Yokota et al** disclose the at least one stiffness-adjusting device is coupled within a frame rail at the front or the sides within the vehicle compartment (20, 30; fig. 5a-c, 6a-c, 7a-c; col. 9, line 31 – col. 11, line 50).

In claim 12, **Yokota et al** disclose the vehicle comprising within each side frame (left and right) a stiffness-adjusting device (air bags 20 L, 20R; fig. 3).

In claims 17, 19 and 20, **Yokota et al** disclose a method for modifying collision load of a vehicle, comprising detecting and classifying at least one object (adult or child; col. 11, lines 51-65), determining velocity (claim 2) and collision type (head-on collision; claim 4), judging collision threat based on velocity and collision type, activating at least one stiffness adjusting device in response to the collision threat (claim 2).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Yokota et al** in view of **Brown et al** [US. 6,036,226].

In claim 7, **Yokota et al** fail to disclose the magneto-rheological material; **Brown et al** teach a stiffness-adjusting device comprising an outer body filled with magneto-rheological material for inflating the device in response to an accident involving the vehicle (abstract; col. 4, lines 38-47). It would have been obvious to one having ordinary skill in the art at the time of the invention was made to use magneto-rheological material to inflate the stiffness-adjusting device as designer choice based on preference, cost or convenient of supply.

5. Claims 11, 13 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yokota et al** in view of **Wong** [US. 3,871,471].

In claim 11, **Yokota et al** fail to disclose a tire deflation apparatus; **Wong** teaches a tire deflation apparatus as an auxiliary device for decelerating the vehicle in addition to the braking system when the vehicle is in imminent danger or collision (abstract; col. 1, lines 33-40). It would have been obvious to one having ordinary skill in the art at the time of the invention was made to add a tire deflation apparatus as taught by **Wong** to **Yokota et al** system to provide additional safety for the vehicle operator in the case of imminent danger or collision, and it would have been obvious in an electronic age, the tire deflation apparatus is preferred to be controlled electronically as other components in the system (airbag inflation, steering column shortening; fig. 7c; col. 10, lines 46-67).

In claim 13, **Yokota et al** (abstract) and **Wong** (col. 1, lines 33-40) combined disclose an adaptive collision load modification system comprising object detection sensors, stiffness-adjusting devices for absorbing collision energy including airbags, steering column shortening and tires, a controller to control the partial inflation or

Art Unit: 2636

deflation at least one stiffness-adjusting device (including tire) in response to a danger of collision detected.

In claim 18, **Yokota et al** and **Wong** (col. 1, lines 33-40) combined disclose a method of partially deflate a vehicle tire in response to the threat of collision.

6. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yokota et al** and **Wong** in view of **Kolassa et al** [US. 6,290,019].

In claim 15, **Yokota et al** and **Wong** combined fail to disclose the tire deflation apparatus is selected from a pyrotechnic element. **Kolassa et al** teach a pyrotechnic element is used to deflate a tire in case of accident threat by vehicle roll over (col. 2, lines 55-62). It would have been obvious to one having ordinary skill in the art at the time of the invention was made, the selection of element used to deflate a tire is purely based on designer choice.

In claim 16, **Yokota et al** disclose the control of inflating or deflating the left or the right stiffness-adjusting device in response to object detection signals, **Wong** teach the stiffness-adjusting device can be the vehicle tires, **Kolassa et al** teach a plurality of tire deflators associated each with a respective one of the vehicle tires, and a controller activating at least one of the tire deflator based on information from a sensor. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to implement the teaching of **Kolassa et al** to **Yokota et al** and **Wong** combined system to adjust the pressure of each tire responsive to the object detection signals for decelerating the vehicle in supplement to the braking system and also to avoid vehicle roll over therefore increasing the safety for the vehicle operator.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wheatley et al disclose a vehicle with wheel toe device. [US. 5,482,322]

Sodova et al disclose a tire deflation device. [US. 6,854,553]

Kruse et al disclose a vehicle impact sensor arrangement for detecting a side impact. [US. 5,623,246]

Okada discloses a collision sensing system for vehicles. [US. 4,399,887]

Medovsky et al disclose a variable output inflator (magneto-rheological fluid). [US. 6,789,820]

Miller et al disclose a wireless communication between countermeasure devices. [US. 6,480,144]

Stopczynski disclose passive countermeasure methods. [US. 6,519,519]

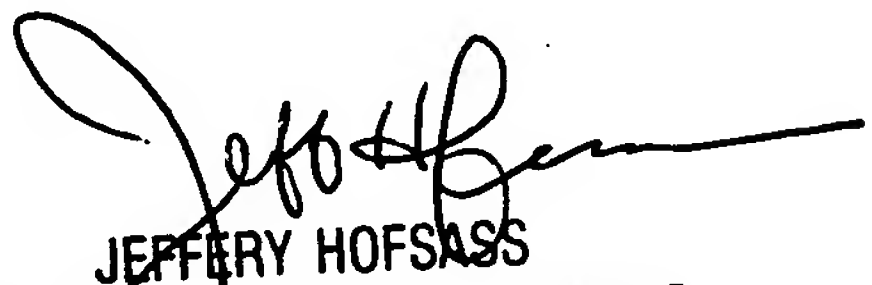
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne V. Lai whose telephone number is 571-272-2974. The examiner can normally be reached on 8:00 am to 5:30 pm, Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hofsass Jeffery can be reached on 571-272-2981. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2636

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A. V. Lai
May 5, 2005


JEFFERY HOFSSASS
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